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The Effect of Audit Market Competition on Audit Quality in the Iraqi Environment

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Abstract

The aim of this study is to measure and analyze the level of competition in the Iraqi auditing market, as well as to evaluate and analyze the quality of auditing for auditing offices and companies operating in the Iraqi environment. The study also seeks to test the relationship between the level of competition and audit quality for these offices and companies.

To achieve the study's objectives, a main hypothesis was adopted to test the relationship between the variables under investigation. The study employed an experimental method based on quantitative evaluation and analysis, utilizing the annual financial data of companies listed in the Iraq Stock Exchange and official market reports as sources of data for the period from 2017 to 2021.

The study sample comprised 26 Iraqi auditing offices and companies, selected from a purposive sample of 22 joint-stock companies listed in the Iraq Stock Exchange. The data of these companies were used to evaluate the study variables related to auditing offices and companies in the sample.

Taking into account the aforementioned, the study concludes that there is a significant relationship and impact of market competition on the quality of auditing. Additionally, the study finds that the Iraqi auditing market exhibits a strong oligopoly structure and is therefore an inefficient competitive market.

Keywords: *Audit Market Competition, Audit Market Concentration, Audit quality, Herfindahl–Hirschman index, Iraqi Environment, Modified Jones-model.*

1. Introduction

Auditing services represent an economic commodity that is influenced, like other goods and services, by factors such as competition, supply, and demand. To determine the extent to which the auditing market approaches competition or monopolization, it is necessary to first study the market structure in order to determine the nature of demand and supply, as well as the mechanisms of equilibrium within it. On the demand side, incentives and the efficiency of contributors play an important role, while on the supply side, the efficiency and incentives of auditors for independence, arising from concerns about litigation and reputation, collectively form driving forces to provide high-quality auditing processes

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(Dong, 2020). In light of the trends and phenomena observed in the auditing market, this serves as a strong motivation for professional regulatory bodies to interpret these phenomena and analyze their positive and negative effects on the auditing market and its role in the financial community (Geng et al., 2021). Several phenomena observed in the auditing market include the decline in the level of competition, the dominance of a limited number of auditing firms in the market, the processes of mergers and acquisitions, and the trend towards the formation of large professional blocs. These trends may lead to the emergence of an oligopoly in the market, or what is known as market concentration (El-Dyasty, 2017). The auditing profession provides an economically valuable service, and the economic situation of this service depends on the quality and price of the service. Therefore, it is reasonable to assume that the quality of auditing is influenced by the level of competition in the auditing services market (Al-Attar et al., 2019).

As competition intensifies among audit firms, auditors may find themselves torn between their obligation to maintain professional independence and their desire to retain their clients. This may lead to an ethical dilemma and a violation of professional standards and codes of conduct. Auditors may issue a clean opinion in favor of the client to retain their business and avoid being replaced by another auditor, resulting in compromised audit quality (Newton et al., 2013). Moreover, increasing competition in the audit market may motivate firms to maintain their market share despite limited capabilities and resources, leading to a decrease in revenue. Consequently, audit firms may accept lower fees and compromise on audit quality by not utilizing advanced techniques or experienced audit teams. Auditing programs may also be shortened, and procedures may be eliminated to minimize auditing costs (Oradi et al., 2018). In highly competitive markets, customers may have greater influence over auditors, leading to compromised audit quality. In such markets, auditors may be more likely to comply with the demands of their clients, as their bargaining power is weakened. This issue is supported by research conducted by Newton et al. (2016), who suggest that an increase in available choices for customers exacerbates this problem.

The increasing competition in the auditing markets of developing economies could create pressures on audit fees. When audit firms feel threatened by intense competition from rival auditors in the market, they may lower their audit fees to gain a competitive edge, leading to a price competition at the expense of quality (Azizkhani, Hosseini, & Naeini, 2020). Similarly, the intensifying competition in the auditing market may result in unfavorable consequences, including price competition (i.e., lowering audit fees) instead of improving audit quality, as well as an increase in the opportunity to switch auditors by company management. This creates an incentive for management to change auditors and search for another auditor who is more responsive to management's desires, which affects the quality of services provided and jeopardizes auditor independence (Rezaei, 2015). In contrast, increased competition in auditing markets can also have positive effects. For instance, it can drive auditing innovations and the development of more efficient and effective auditing processes that ultimately enhance the quality of audit services. This is because the dominance of the four major auditing firms (Big 4) in the market may lead to their engagement in monopolistic activities that prioritize their interests over providing high-quality auditing services. In addition, high levels of concentration may lead to auditors neglecting their auditing duties and reducing the scope of auditing tests. This is because auditing firms operating in less competitive markets face less pressure and have stronger negotiating power, making the risk of being replaced by another auditor low. As a result, auditors may become less aware of the defects and errors that they may encounter while performing their tasks, ultimately leading to a decline in the quality of auditing. (White, 2018; Hallman et al., 2019).

A competitive auditing market can positively impact the quality of auditing and its effects on auditor independence. The lack of competition among the Big 4 auditing firms may result in several imbalances, such as smaller auditing firms exiting the market due to

their inability to compete. In an attempt to maintain their market share, some smaller firms may reduce their fees to please clients, leading to a reduction in the cost of the auditing process by assigning a small number of staff to perform the auditing process, reducing the number of working hours, shortening the auditing program, performing few procedures, deleting many of them, and accepting a higher level of risk, all of which negatively affect auditing quality (Xie, 2016). In contrast, a lack of competition in the auditing market can lead to a decrease in incentives for auditing firms to improve their performance and knowledge, resulting in a decline in audit quality. This is because auditors may feel complacent and secure in their positions due to limited options for clients to replace them with another auditor. Conversely, highly competitive markets incentivize auditing firms to operate efficiently and exert more effort to stay in business, leading to higher levels of audit quality. In a competitive market, service providers are pushed to improve the quality of their services to attract and retain clients. If an auditing firm fails to provide high-quality audit services, it is difficult to obtain new clients or continue with existing ones (Al-Attar et al., 2019). Therefore, price competition is no longer effective in attracting customers compared to competition in the field of audit quality provided by each office. Many customers tend to go to audit offices that provide high-quality services, which increases the confidence of information users in the reports and their reliance on them (Wu, 2019). Therefore, the entry of a new competitor may force large audit companies to carry out auditing operations efficiently and effectively to serve the user's goals and requirements, and in accordance with the agreed professional standards, leading to an increase in audit quality (Chen et al., 2018). Therefore, a low level of competition and the domination of a limited number of audit companies in the market may lead to implicit collusion among dominant auditors, resulting in a decrease in audit service quality with high fees imposed (Cho et al., 2014). Therefore, increasing competition in the auditing market leads to an increase in the quality of auditing. With increasing competition, auditors can impose reasonable auditing fees that allow them to conduct more effective and independent auditing operations, using more efficient and effective methods to distinguish themselves from other competitors and build a good reputation, which is reflected in their market share (Azizkhani et al., 2022).

The Iraqi auditing market lacks sufficient studies that analyze its competition level and its impact on auditing firms' behavior and service quality. Consequently, researchers seek to examine this issue and comprehend the market's dynamics. Therefore, the study aims to answer two primary questions: first, what is the nature of competition in the Iraqi auditing market? Second, how does the market competition affect the level of auditing quality offered by Iraqi auditing firms?

Therefore, the present study aimed to assess the level of competition in the Iraqi auditing services market at the market level using AMCOM as a representative sample. The Herfindahl-Hirschman Index (HHI) was calculated to determine market concentration, using the market shares of all auditing companies operating in the market. Descriptive analysis results revealed that the Iraqi auditing market is generally characterized by non-efficient competition, with a strong oligopoly market structure. Moreover, the absolute value of optional fees was utilized as an indicator of audit quality, alongside the HHI as a measure of competition level within the auditing market.

According to the current study, there is a significant and moderate negative correlation between market competition and audit quality, suggesting that competition has a substantial impact on the quality of audits. This implies that heightened competition in the audit market can negatively affect auditors' drive to enhance their expertise, performance, and service quality, leading to a decrease in effort during the audit process and a more lenient approach. Consequently, audit quality is reduced.

The remaining part of this study is organized into several sections. Section 2 provides a comprehensive review and analysis of previous studies that are related to the topic of the current study. The purpose of this section is to provide a theoretical foundation and to

identify research gaps that this study aims to fill. Section 3 explains the hypotheses of the current study, which are based on both the theoretical analysis of the relationship between the study variables (industrial organization theory) as proposed by Bain in 1951, and the results of previous studies. In Section 4, the methodology used for conducting the empirical study is presented, including the research design, data collection methods, and the statistical techniques used for data analysis. Section 5 presents the descriptive statistics and results of the hypothesis testing model, along with a detailed discussion of the interpretations related to those results. Finally, Section 6 provides a conclusion for the study, which summarizes the main findings and implications of the study.

2. Literature Review:

Since the early 1970s, the accounting literature has presented numerous studies on competition in the auditing services market. Initially, the studies aimed to provide a descriptive analysis of the market structure and the distribution of market shares among auditing firms and offices. Subsequently, the level of competition was assessed using the HHI concentration index at any given time. Moreover, these studies aimed to clarify the market position in comparison to other auditing markets by comparing the concentration levels with those in different environments. They also sought to determine the evolution of competition levels in the auditing market by applying a long-term analysis or by comparing the competition levels presented in previous studies conducted on the same market (Barbadillo & Castro, 2013; Moctezuma & Benau, 2014; Carson, 2019; Groff & Salihovic, 2016; Saglam & Orhan, 2018).

Most studies in the aftermath of the mergers between major globally spread auditing firms in the 1980s and 1990s focused on analyzing the effects of those operations on the concentration levels of the auditing services market in different environments (Yang et al., 2012; Kitto, 2017; Liu, 2018; Ferguson et al., 2020; McMeeking et al., 2021). With time, studies have shifted towards verifying the extent of the impact of phenomena and changes that occurred in auditing markets, whether local or international, on competition levels. One such phenomenon is the enactment of the SOX (Sarbanes-Oxley) law following the collapse of Arthur Andersen auditing firm in 2002. A study (DeFond & Lennox, 2011) indicated a significant decrease in competition levels in the US auditing market due to the issuance of the SOX law, which led to the exit of approximately 600 external auditors from the auditing market. Another study (Bleibtreu & Stefani, 2012) confirmed this finding a decrease in the level of competition and an increase in the degree of concentration in the auditing market after this law banned auditors from providing consulting services to the same client in addition to auditing services. It pointed to a direct impact of this ban on the level of competition in the auditing market.

Many studies have focused on verifying the extent to which the control of a limited number of audit offices and companies affects the variables related to the auditing profession, such as the quality of the auditing process or the quality of its outputs, and pricing of auditing services. It is worth mentioning that the results of the studies conducted in this regard have been mixed. For example, a study by Kallapur et al. (2010) found an inverse relationship between competition in the auditing market (measured by the HHI concentration index) and the quality of auditing (measured by the estimated accruals and the quality of accruals). This result was explained in light of the claim that a decrease in the level of competition in the market as a whole may reflect an increase in competition among the major dominant audit firms, leading to an increase in the quality of auditing. Similarly, the results of a study by Newton et al. (2013) showed an inverse relationship between competition in the American auditing market (measured by the concentration index for each geographical region) and the quality of auditing (measured by the restatement of financial statements). The study conducted by Huang et al. (2016) found that there is an inverse relationship between competition in the audit market and

audit quality, as demonstrated by adding the variable of audit fees and using the same metrics. This indicates that high concentration indirectly improves audit quality by increasing audit fees, and this positive indirect effect offsets the direct negative effect of high concentration on audit quality. A study by Oradi et al. (2018) confirmed this finding using the same metrics and provided a broader explanation of this relationship by adding the variable of the size of the audit market as one of the factors affecting the relationship between competition in the audit market and audit quality. Similarly, a study by Chen et al. (2018) found a negative relationship between the concentration level of the dominant group in the market (Big 4) measured by the concentration index and audit quality using the same previous measures, indicating the extent of inequality in the distribution of their total market share among them. The findings suggest that market concentration among auditing firms (specifically the Big 4) does not harm audit quality, but may actually improve it. However, an increase in concentration among these firms, with one or two dominating the market, is negatively associated with audit quality. Conversely, a study by Johnson et al. (2021) found that increased competition in the Nigerian auditing market (measured by the HHI index) was negatively related to audit quality (measured by the absolute value of optional fees). This was also supported by a study by Azizkhani et al. (2022), which focused on audit markets in developing economies and arrived at a similar conclusion using the same measures. The negative relationship between competition and audit quality was explained by the claim that increased competition puts pressure on audit fees at the expense of audit quality.

Contrary to the findings of previous studies, Cho et al. (2014) found a positive relationship between competition in the audit market (measured by the Herfindahl-Hirschman Index) and audit quality (measured by the absolute value of discretionary accruals). This study argued that low levels of competition in the audit market could result in dominant auditors being more tolerant of client earnings management, which could lead to lower audit quality. Cho et al. (2014) found that there was an inverse relationship between the overall level of competition in the audit market (measured by the Herfindahl-Hirschman Index) and the likelihood of clients' earnings meeting or exceeding analysts' profit expectations, which is an indicator of audit quality. This suggests that an increase in competition led to an improvement in audit quality. Similarly, Xie (2016) found a positive relationship between competition in the audit market and audit quality using the same measures, but provided a broader explanation of the relationship by adding the independence of the auditor as a factor affecting audit quality. The study found that audit quality improved after mandatory rotation decisions for audit offices and companies in less concentrated (more competitive) markets. In a similar vein, a study conducted by El-Attar and colleagues (2019) explored the relationship between competition in the Egyptian auditing market (measured by the HHI index) and audit quality using two metrics: the size of the auditing office and the Modified Jones-model. The study found a negative relationship between competition and audit quality when using the former metric, and a positive relationship between them when using the latter. This suggests that low levels of competition in the auditing market lead to increased auditor complacency and job security, which may result in a less skeptical and more lenient approach to auditing, ultimately decreasing audit quality. This finding was corroborated by a study by Bengoriz and colleagues (2020), which used the same metrics and added auditors' workload as a factor affecting the relationship between competition in the auditing market and audit quality. The study found that increased workload further exacerbates the negative effect of low competition on audit quality. According to the study, an increase in the concentration of the auditing market leads to an increase in the workload of auditors, resulting in estimation errors, higher audit risks, and a reduction in the level of audit quality. A similar study conducted by Song (2021) also found a negative relationship between market concentration and audit quality, with the addition of advisory committee experience as a variable that affects this relationship. The study showed that when the audit committee has certified accountants or other accounting experts, such as

CFOs or finance experts, the quality of audit decreases as market concentration increases. These findings were confirmed by Mohammadi et al. (2023), who found a significant and negative relationship between market concentration in the audit market (measured by the HHI index) and audit quality (measured by the tone of the audit report). The study suggested that increased concentration in the hands of large audit firms leads to unfair competition among small firms, resulting in leniency towards clients out of fear of losing them, which ultimately leads to lower audit quality.

There is a scarcity of adequate studies regarding competition in the audit services market within the Iraqi environment, and to the best of the researcher's knowledge, no study has yet measured the level of competition and its effects on audit quality. Furthermore, previous studies have presented conflicting results concerning the relationship between competition in the audit services market and audit quality in different environments. Therefore, the researchers intend to make a modest contribution to this issue by measuring the levels of competition in the Iraqi audit services market and examining its effect on audit quality during the study period, with the presence of a control variable (company size subject to auditing). The study will use actual data from the financial statements of companies listed in the Iraq Stock Exchange.

3.Hypothesis Development:

The high concentration levels in the audit services market can result in auditors being content with their status in an inefficient market with limited alternatives available for clients to choose from if they want to switch to a different auditor. As a consequence, auditors might adopt a less critical and more forgiving approach, leading to a decrease in traditional audit tests and a higher chance of manipulation of profits or an increase in undetected error rates by management. This could lead to a decrease in the motivation of audit firms to improve their performance, enhance their knowledge, and elevate the quality of their service provided to the clients (Francis & et al., 2013).

In the same vein, a high concentration in the audit market may diminish the motivation of audit firms to improve their performance, knowledge, and the quality of their services, as auditors may feel a sense of job security due to the limited options available to clients to replace them with another auditor. In contrast, in a competitive audit market, audit firms operate efficiently to remain in business (Bengoriz et al., 2020). Furthermore, as market concentration increases, the market power of the dominant auditing firms continues to rise. Due to their collective dominance in the market, there is a possibility of implicit collusion among the four major firms, given the oligopolistic nature of the market. This could lead to price-fixing agreements and a reduction in traditional audit tests to deal with the cost pressures they face, ultimately compromising the provision of high-quality, distinguished auditing services (Azizkhani et al., 2022). Based on this, it can be argued that competition intensity may push auditing firms to enhance their methods by utilizing more efficient and effective auditing techniques, differentiating themselves from competitors, and building a strong reputation, which translates to a higher market share. As a result, this enhances auditor independence and adherence to auditing values and ethics as an independent regulatory profession, leading to higher audit quality, or at least maintaining it at a constant level (Song, 2021).

On the other hand, in highly competitive markets, auditing firms may prioritize retaining clients over maintaining audit quality by improving their relationships with clients or showing leniency towards them, which may increase auditors' efficiency but decrease their effectiveness. The fear of losing clients in a highly competitive environment can push auditors to become more lenient with their clients, resulting in a greater likelihood of not reporting or correcting material errors, which can weaken their independence (Newton & et al., 2013; Al-Attar et al., 2019). Conversely, an increase in audit quality may occur as a result of a decrease in competition and an increase in market

concentration in the auditing industry. This is because an increase in market concentration can bring about economies of scale and scope, which can lead to cost savings that are passed on to service users. Thus, higher market concentration (i.e., decreased competition) can potentially result in improved audit quality (Cho et al., 2014). Therefore, it can be concluded that a decrease in competition levels in the audit market may strengthen the auditor's negotiating position with the client, as the client has limited options to switch to another auditor who may be less strict and more accommodating. This reduces the likelihood of the auditor responding to the client's desires and needs during profit management to improve the company's image, which, in turn, increases audit quality (Mohammadi et al., 2023). Based on the agreement of both the industrial organization theory and previous studies, it can be hypothesized that there is a statistically significant relationship and effect between competition in the auditing market and audit quality for Iraqi auditing firms and companies, given the control variable of the size of the audited company. Although previous studies have conflicting views on the direction of this effect, the main hypothesis to be tested in the Iraqi environment can be formulated as such: there is a statistically significant relationship and effect between competition in the auditing market and audit quality for Iraqi auditing firms and companies, given the control variable (the size of the audited company).

4. Methodology:

4.1 The Independent Variable:

The variable represents the degree of competition between auditing firms in the Iraqi market. This is determined by calculating the market share percentage of listed companies in the Iraqi Stock Exchange held by each auditing firm and dividing it by the total market share held by all registered auditing firms in the market. This calculation provides insight into the nature of the market competition.

The Herfindahl-Hirschman Index or HHI-Score is a widely used indicator to evaluate the level of competition among companies operating in the same market. This economic concept is often applied in antitrust law to combat monopolies and to understand how the size of companies affects the markets they are associated with. Accounting studies typically use the Herfindahl index to represent the level of competition in the auditing market. This is due to the fact that the specialized committee affiliated with the US Congress commonly employs this method to determine the extent of dominance of large auditing firms in the auditing market. (Wu, 2019; Godawska & Kutera, 2021).

This index calculates the level of competition by squaring the market share ratios of each auditing firm or company in the market, which assigns more weight to firms with larger market shares. The resulting index values range from 0 to 1.0, with an increase indicating a decrease in competition and a decrease indicating the opposite (Saglam & Orhan, 2018). The formula used to calculate the index is widely used in accounting studies and is represented by the following equation (Zhang et al., 2019) (Chen et al., 2018) (Godawska & Kutera, 2021) (Hall et al., 2021):

$$HHI = \frac{\sum_i^n s_i^2}{\left(\sum_i^k s_i\right)^2} \quad \text{.....(1)}$$

Where:

n = the number of large auditing firms.

k = the total number of auditing firms in the market.

Si = the size of the auditing firm (usually measured by the number of audit operations or audit fees)

The degree of competition in the auditing market was measured at the market level, using the market concentration index for all firms operating in the market for each year, known as AMCOM. This measurement aimed to test the study hypothesis. The index was calculated based on the profits or revenues of auditing offices and firms. However, reliable data for all auditing offices and firms operating in the Iraqi environment was limited, leading the researchers to use the size of the auditing company as an alternative indicator of profits or revenues. The market share of the auditing company was represented by the ratio of the total assets of the auditing company's clients to the total assets of all clients in the market. This method was based on previous studies that used similar measurements (Chen et al., 2014; Choi et al., 2017; Al-Attar et al., 2019; Johnson et al., 2021; Azizkhani et al., 2022).

4.2 The dependent variable:

The dependent variable represents the procedural quality of the audit, which is measured by the efficiency and effectiveness of the means, procedures, and plans used to carry out the audit process. This involves meeting the requirements of interested parties, complying with professional codes of conduct, and adhering to audit standards (Kandil, 2022). To evaluate this variable, the study used indirect measures related to the audited company (Crucean & Hategan, 2019). The Modified Jones-model was adopted to express the quality of the audit, where discretionary accruals were calculated. According to the model, the lower the discretionary accruals, the higher the quality of the audit, and vice versa. The equations used to calculate discretionary accruals in the Modified Jones-model are as follows (White, 2018) (Morais, 2020) (Johnson et al., 2021):

The calculation of the Total Accruals using the following equation:

$$TA_{it} = NI_{it} - CFO_{it} \quad \text{..... (2)}$$

The slope values is calculated through the following equation:

$$\frac{TA_{it}}{A_{it-1}} = \alpha_1 + \beta_{1i}\left(\frac{1}{A_{it-1}}\right) + \beta_{2i}\left(\frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}}\right) + \beta_{3i}\left(\frac{PPE_{it}}{A_{it-1}}\right) + \varepsilon_{it} \quad \text{..... (3)}$$

The non-discretionary accruals is calculated according to the following equation:

$$NDA_{it} = \beta_{1i}\left(\frac{1}{A_{it-1}}\right) + \beta_{2i}\left(\frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}}\right) + \beta_{3i}\left(\frac{PPE_{it}}{A_{it-1}}\right) \quad \text{..... (4)}$$

The Discretionary Accruals (DA_it) is calculated by the following equation:

$$DA_{it} = \frac{TA_{it}}{A_{it-1}} - NDA_{it} \quad \text{..... (5)}$$

Where:

DA_{it} represents the Discretionary Accruals for company *i* in period *t*.

TA_{it} represents the Total Accruals for company *i* in period *t*.

$Assetsit_{-1}$ represents the total assets of company *i* at the end of period *t-1*.

NDA_{it} represents the non-discretionary accruals for company *i* in period *t*.

4.3 The measures of the control variable and its justification for addition:

The size of the audited company is a commonly used control variable in auditing research to regulate the relationship between competition and audit quality. This variable is justified as it can influence the results of the study due to the potential differences in the complexity and risk associated with auditing companies of different sizes. In this study, the natural logarithm of the size of the audited company was used as a measure of the control variable (Al-Attar et al., 2019).

4.4 Model Description for Testing the Hypothesis:

The researchers have proposed a model to test the hypothesis of the study, which is based on previous research. The model examines the relationship between competition in the auditing market, the quality of the audit, and the size of the audited company, which is used as a control variable; the model is as follows:

$AQ_{it} = \beta_0 + \beta_1 COM_{it} + \beta_2 COSIZE_{it} + \varepsilon_{it}$ …… (6)

Where:

β0: the intercept value.

β2, β1: the coefficients of the independent variables.

AQ: audit quality for the study sample of audit firms and offices, measured by the absolute value of discretionary accruals.

COM: market competition measured using the Herfindahl index.

COSIZE: the size of the client company as a control variable, measured by the natural logarithm of the client's asset size at the end of the year.

ε: the random error in the model.

The researchers defined the variables included in the previous model for each company and each year in the appendix. The model includes competition in the auditing market (AMCOM) as an independent variable and audit quality as a dependent variable. The size of the audited company was also included as a control variable, as it has been recognized in accounting literature to have an impact on audit quality. The researchers ran the model using all available companies with the necessary operational data, and all relevant data for each year during the study period were collected in one dataset to run the model entirely.

4.5 Sample and Data Collection Sources:

The study population consisted of companies listed in the Iraq Stock Exchange, which comprised 105 companies as of the end of the fiscal year 2021 (https://www.isc.gov.iq/index.php). The sample size was purposefully selected based on specific conditions required for the study, as detailed in the following table:

Table (1): Conditions for Selecting Study Sample Companies

Procedure	Number of companies
Study population	105
Excluded: The banking sector due to its subject to joint auditing, and thus, data overlap between auditing offices and companies	44
Excluded: Mixed companies, which are audited by the Financial Supervisory Board, which is beyond the scope of the current study	31
Excluded: Companies with incomplete financial data during the study period	6
Excluded: Companies that are suspended or delisted from the market	1
Excluded: Companies with consolidated financial statements, as they include more than one company and are audited by more than one auditing office or company	1
Final sample size	22

Source: Prepared by the researchers based on the official reports' publications of the Iraq Stock Exchange

Based on the conditions specified in the aforementioned table, the study's sample comprised 22 companies, representing various market sectors except for banking, with a sampling ratio of approximately 21%. The study examined five primary variables, and the sample size consisted of 22 companies for one year, yielding a total of 110 annual

observations. The study spanned five years, from 2017 to 2021, and involved a total of 550 observations.

The researchers also selected a sample of auditing firms to represent those that audited the listed companies in the selected sample. Since there was a lack of available data for the auditing firms themselves, the study variables related to auditing firms were tested using data from the companies audited by those auditing firms. Thus, the auditing firms constituted the main population of the study.

Based on the 2021 official auditors' monitoring report (https://drive.google.com/file/d/1b9D8DrH-uawZNxKkt2hj-4PA9faaC0Ji/view), there were 230 auditing firms and offices in total. Out of these, a sample of 26 auditing firms and offices was selected to audit the listed companies in the financial market, representing a sampling rate of 23%. The total number of auditing firms and offices authorized to audit the accounts of listed companies in the financial market was 112.

5. Data Analysis:

5.1 Descriptive Statistics:

Table (2) presents a detailed overview of the level of competition in the Iraqi auditing market throughout the study period, as measured by the Herfindahl-Hirschman Index (HHI-Score). The HHI-Score was calculated using total assets as a basis to determine the market share of each auditing firm at the overall market level.

Table (2): Top Auditing Firms and Herfindahl Index (HHI-Score) for the Market

Audit Firms:	2017		2018		2019		2020		2021	
	%	ranking	%	ranking	%	ranking	%	ranking	%	ranking
Adel Al-Husoun	0.87059	1	0.86102	1	0.84188	1	0.84324	1	0.78139	1
Farqad Al-Salman	0.08855	2	0.10108	2	-	-	-	-	-	-
Hussein Al-Jubouri	0.0111	3	0.01201	3	0.01316	3	0.01353	3	0.0168	3
Tahsin Na'ma Al-Araji	0.00655	4	0.00716	4	0.00706	4	0.00613	4	0.00758	4
Adel Ismail Hassan Al-Shaibei	0.00489	5	0.00560	5	0.00369	5	0.00436	5	0.00789	5
Ahmed Al-Jubouri	--	--	--	--	0.11668	2	0.11829	2	0.16460	2
Herfindahl Index	0.766		0.752		0.723		0.725		0.638	

Source: Compiled by researchers based on the data provided in the previous table.

Based on the above table, it is clear that the largest five auditing firms were selected based on their market share, and their ranking was in descending order for each year of the study, as demonstrated in the preceding table. The results reveal that the top five auditing firms captured 77%, 75%, 72%, 73%, and 64% of the total market share of the

auditing market in the selected sample during the study period (2017-2021), respectively. It is noteworthy that Adel Al-Hasoon and Partners was the largest firm throughout the five-year period and held the most significant market share compared to other major auditing firms.

The level of competitiveness and the existence of a monopoly in the Iraqi auditing market were assessed using the criteria established by the US Government Accountability Office (GAO, 2008). The findings of the evaluation are displayed in Table (3).

Table (3): Criteria for judging the level of competition in the auditing market

High Market Concentration	Moderate Market Concentration	Low Market Concentration	Market Concentration Measure
HI > 0.18	0.1 ≤ HI ≤ 0.18	HI < 0.1	HI

(Saglam & Orhan, 2018) Source:

Based on the criteria presented in Table (3) for evaluating the Herfindahl index to assess the level of competition or monopoly in the Iraqi audit market, the results indicate a very high level of monopoly (very low competition) in the Iraqi audit market based on industrial organization theory. This is because the index value was greater than 0.18 in all cases, indicating that the audit market in Iraq is highly concentrated for all years of the study period, despite a slight decrease of around 9% in the fiscal year 2021. The top five audit firms continue to dominate the market, which remains highly centralized and monopolistic.

Furthermore, regarding the assessment of the quality of auditing provided by major auditing firms based on the absolute value of optional fees for audited companies, Table (4) displays the following information:

Table (4): Audit Quality for Large Audit Firms

N	Audit Firm	2017	2018	2019	2020	2021	Mean (average)
1	Adel Alhassoun	183316.6	126338.2	38416.99	227791.4	29136.72	121000
2	Furqad Alsalman	47.73477	59.63436	368.9547	599.754	23.53448	123.1533
3	Ahmed Aljabouri	-	-	10.2063	0.61178	6.58041	5.799497
4	Adel Alshebi	172.9325	146.7302	78.59193	528.3263	182.8299	253.7235
5	Hussein Aljabouri	3473.74	1240.66	145.6775	1140.694	1272.58	1454.67
Average of Averages		46752.75	31946.31	7804.084	46012.16	6124.449	24567.47

The results shown in Table (4) indicate the absolute values of optional fees for companies audited by each audit firm, and comparing them to the average mean value for large audit firms as a whole, which is IQD 24,567.47, it is evident that Adel Al-Hassoun and Partners' audit firm has the lowest audit quality. The other audit firms are of high quality, ranked in the following order: Ahmed Al-Jubouri, Firqad Al-Salman, Adel Al-Shaibi, and finally Hussein Al-Jubouri.

Similarly, the following Table (5) illustrates the results of audit quality for medium and small auditing firms and companies.

Table (5): Audit Quality for Medium and Small Audit Firms

N	Audit firm or office name:	2017	2018	2019	2020	2021	Mean (average)
1	Taha Al-Ardhi Improvement Office	944.154	8020.771	334.884	302.5936	2652.89	2451.059
2	Faridoun Majid Al-Yawar Office	701.327	180.408	326.5943	254.6861	95.198	311.6427
3	Walid Zghair Al-Mansour Office	56.19016	4.598526	74.58851	105.4904	55.5912	59.29176
4	Ahmed Abdul Rasool Al-Obaidi Office	61.1001	574.667	1107.47	46.67783	18.01901	361.5868
5	Azaddin Al-Khashab & Partners Company					163.195	163.195
6	Hashim Al-Tamimi & Partner Company			11.8891	28.66301	48.15942	29.57051
7	Saad Abdulmohaimen Mohammed Company			70.3285			70.3285
8	Mustafa Fouad & Partners Company			118.0668	287.934	472.147	292.7159
9	Walid Mohammed Al-Karkhi Office	1617.915					1617.915
10	Awad Abdul Salam Office		1617.915	2000.77			1809.343
11	Ali Murad Haddad Office				259.211		259.211
12	Bashir Ghani Attra Office	12.499	220.5835	154.382			29.1548
13	Saad Abdul Jabbar Amin Office				19.55936	484.269	251.9142
14	Hashim Salim Mutamrah Office	307.889	71.4964				189.6927
15	Ayad Rashid Al-Quraishi Office	41.8586	127.5382				84.6984
16	Nidal Abdul Zahra Mardawi Office				21.3487		21.3487
17	Jannan Ali Al-Qaisi Office						8.97024
18	Rahim Hamad Ali Office			77.2107		8.97024	77.2107
19	Zuhair Mahmoud Al-Bahrani Office	43.68817	15.64575	1.99916	0.29983		12.40654
20	Haitham Fakhri Ismail Office	58.39306	214.7863	25.18433	667.77	0.69961	226.9352
21	Mazen Adi Al-Bayati Office						69.0528

Average of Averages	384.5014	1104.841	358.614	181.294	69.0528	404.6306

The findings presented in Table 5 show the optional dues values for companies audited by each small or medium-sized auditing office, compared to the average of all small and medium-sized auditing offices and companies, which is 404.6306 dinars. The results indicate that all auditing offices, except for three offices (Tahseen Al-Aradi's office, Walid Mohammed Al-Karkhi's office, and Awad Abdulsalam's office), were of good quality.

Furthermore, Table 6 displays the Pearson correlation coefficient between the variables included in the study's hypothesis test model, which indicates the initial correlation relationship among those variables. The results of the correlation coefficients for the variables in the study are presented in the following table:

Table (6): Pearson Correlation

Variables		Com	AQ	COSIZE
Com	Pearson Correlation	1	-.247	.206
	Sig. (2-tailed)		.224	.358
	N	26	26	22
AQ	Pearson Correlation	-.247	1	.357
	Sig. (2-tailed)	.224		.103
	N	26	26	22
COSIZE	Pearson Correlation	.206	.357	1
	Sig. (2-tailed)	.358	.103	
	N	22	22	22

The results presented in the above table suggest that the relationship between the dependent variable (audit quality) and the independent variables is variable. The correlation between audit quality and market competition was weakly negative, with a value of (-0.247), and was not statistically significant at a significance level of (0.05) with a value of (0.224). This suggests that there is an inverse relationship between audit quality and market competition. Conversely, the correlation between audit quality and the control variable, the size of the audited company, was moderately positive, with a value of (0.357), and was not statistically significant at a significance level of (0.05) with a calculated level of significance of (0.103). This implies that larger audited companies have a greater need for high-quality audit services. The correlation between market competition and the controlling variable was positively correlated, with a value of (0.206), and the calculated significance level was (0.358). This indicates a weak relationship between the independent variables, supporting the non-linearity of the relationship between the variables and their suitability for testing.

5.2 The results of the study's hypothesis:

The results of the hypothesis testing for the study indicate that the multiple regression equation demonstrated a moderate correlation with a correlation coefficient (R) value of 0.539. The coefficient of determination (R2) value was 0.290, suggesting that the independent variables account for 29% of the variance in the dependent variable, while other variables outside the model account for the remaining variance.

The following table presents the correlation coefficients for the regression equation of the variables of audit market competition and audit quality.

Table (7): the correlation coefficients for the regression equation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.539[a]	.290	.215	.43689

The analysis of variance revealed that the computed F-value was 3.882 with a significance level of 0.039 and degrees of freedom (2, 19), which is lower than the predetermined level of significance (0.05). These findings demonstrate that the regression

model as a whole is statistically significant. Moreover, the regression equation coefficients presented in the following table.

Table (8): Results of regression equation coefficients for competition variables in the audit market and audit quality.

Model		Unstandardized Coefficients		Standardized Coefficien	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.132	.705		-.187	.854		
	Com	-.209	.100	-.412	-2.087	.048	.958	1.044
	Log	.163	.073	.442	2.237	.037	.958	1.044

According to the results of the coefficients, the competition variable (β_1) had a negative impact coefficient value of (0.209-), indicating a decrease in audit quality with an increase in competition. The t-value was (2.087) with a significance level of (0.048), which is lower than the adopted level of significance (0.05). Additionally, the control variable (β_2) had a positive impact coefficient value of (0.163), confirming that audit quality increases with the size of the audited company. The t-value was (0.237) with a significance level of (0.037), which is also lower than the adopted level of significance. As a result, the first main hypothesis is accepted, and it can be concluded that there is a significant effect of market competition and the control variable on audit quality.

This finding is in line with several previous studies, such as those by Kallapur et al. (2010), Newton et al. (2013), Huang et al. (2016), Chen et al. (2018), Johnson et al. (2021), and Azizkhani et al. (2022), which suggest that audit firms operating in highly competitive markets prioritize retaining clients over audit quality by improving client relationships or showing leniency towards them. In such a competitive environment, auditors may become more lenient with clients, increasing the likelihood that audit efforts are insufficient to detect material misstatements. It is anticipated that the size of the audited company will have a positive impact on audit quality since the agency problem between management and shareholders becomes more significant as the size of the audited company increases. Consequently, external auditors are expected to exert more effort and work more efficiently to maintain a consistent level of quality to mitigate agency problems.

This finding contradicts the industrial organization theory, which suggests that increasing competition and decreasing concentration among service providers lead to an increase in service quality through the structure-conduct-performance model. However, this was not observed in the auditing services market studied, where highly competitive firms tended to prioritize client retention over audit quality. This led to accepting low fees and a reduced motivation to increase effort, efficiency, and the use of advanced techniques due to their high costs. Additionally, experienced auditors were not hired due to their high salaries. These firms also shortened audit programs and eliminated procedures, while also showing leniency in their opinion to achieve a reasonable profit margin, further compromising audit quality.

On the other hand, this relationship can be explained by the fact that even though the Iraqi auditing market has low competition overall, there is still competition among the dominant Big 5 auditing firms. As these firms hold the majority of market shares and have varying shares among them, it has led to increased competition between them. This competition provides sufficient incentive for these firms to exert more effort in the auditing process and avoid serious errors that may occur during the audit process.

Therefore, they strive to improve the quality of their services to maintain their position in the market and gain a competitive advantage over their rivals.

6. Discussion and Recommendations:

The aim of this study was to investigate the levels of competition in the auditing services market, as well as the impact of competition on the quality of auditing services provided by auditing firms in the Iraqi environment from 2017 to 2021. The study measured the levels of competition in the Iraqi auditing services market during the study period and found that it is classified as a non-effective competition market according to the industrial organization theory's classification, involving a powerful oligopoly structure.

Regarding the impact of competition levels on auditing quality, the results of the study's hypothesis testing model showed that competition in the auditing services market at the overall market level negatively affects the quality of auditing with the presence of a control variable (the size of the audited company).

Thus, as competition intensifies in the auditing services market, auditors face greater ethical conflicts as they seek to retain clients. With increased competition, clients have more options to choose from among auditing firms, making it easier for them to switch auditors.

Consequently, auditors are pressured by clients to lower their fees in response to prevailing market rates. This results in auditors accepting lower fees at the expense of quality or providing a clean opinion on financial reports, even if it contradicts reality, in order to retain clients and gain new ones. As a result, professional performance quality decreases, which ultimately affects the quality of output. Furthermore, the concentration of the Big 5 auditing firms, who dominate the market, coupled with disparities in market shares, exacerbates this problem. However, market competition can also increase the quality of auditing, as the Big 5 firms compete for market share by constantly striving to develop and improve their services, resulting in an overall increase in the quality of auditing.

The researchers have suggested possible reasons for the findings mentioned earlier, which include two key factors. Firstly, the number of registered companies in the Iraqi Stock Exchange is relatively low in comparison to other countries, which results in a smaller market share for auditing services and subsequently, a lower demand for such services. Secondly, the base of audit service providers, especially those licensed by the Board of Supreme Audit and Accounting, has decreased due to the Board's decision (No. 3 of 1999, amended) that prohibits auditors registered with the Board from offering audit services to companies listed in the Iraqi Stock Exchange, as well as setting several registration requirements. This situation has further reduced the number of service providers and has led to an increase in concentration levels, contributing to the dominance of the oligopoly structure in the auditing services market. Furthermore, the researchers identified the low effectiveness of the mandatory rotation mechanism as a contributing factor to the market concentration and low quality of auditing. The mechanism is supposed to help reduce concentration levels, increase the independence and neutrality of the auditor, and improve the quality of auditing. However, it has not been effective in the Iraqi environment. Lastly, the low effectiveness of disciplinary sanctions laws against auditors in the Iraqi environment compared to other countries was identified as another factor that reduces the auditors' concerns about reputation loss or exposure to litigation in case of leniency with the client and passing misleading accounting information.

The researchers recommend that regulatory and supervisory bodies periodically measure the level of competition in the Iraqi auditing market and disclose information about the dominant firms and their market share, based on the general conclusions reached by the study regarding the level of competition in the Iraqi auditing services

market and its impact on audit quality. They also suggest that legal or regulatory requirements should be established for auditing firms to disclose their audit fees to achieve direct measurement of competition levels instead of relying on alternative measurements. Moreover, professional and regulatory bodies should establish rules and procedures for continuous monitoring of the auditing market to prevent a limited number of auditing firms from dominating large companies. To reduce the dominance of large companies alone over audit work, it is necessary to consider involving more than one audit firm to audit large-sized companies. To expand the demand base for audit services and increase the size of the audit services market in Iraq, efforts should be made to increase the number of companies listed on the Iraq Stock Exchange. This would increase the level of competition among audit firms. Encouraging the merger of small and medium-sized audit firms, while setting a minimum limit on the number of auditors required in each firm, would also boost competitiveness in the market. It is recommended to establish a law that mandates periodic rotation of audit firms for each client, preferably every five years. Joint auditing should also be encouraged to reduce the high level of concentration in the market. A unified law is needed to regulate the Iraqi auditing services market, along with the designation of a single entity responsible for regulating the market. Additionally, disciplinary and legal penalties for auditors who violate professional conduct and ethics should be tightened.

The current study shares common limitations with similar studies, including a limited sample size. In this case, the sample was restricted to published data of companies listed on the Iraq Stock Exchange, which may not accurately reflect the broader market due to differences in accounting systems used in various market sectors. As a result, certain sectors may have been neglected, which could have impacted the study's sample size. Another limitation is related to alternative measures. To overcome the unavailability of published data from auditing firms and companies, an asset-based measure was used as an alternative to audit fees. This limitation underscores the need for better data availability and collection methods in the auditing services market.

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